
DEVELOPMENT OF DIGITAL COMIC LEARNING MEDIA IN SCIENCE SUBJECT FOR GRADE III AT SD PAB 25 MEDAN ACADEMIC YEAR 2024/2025

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ABSTRACT

This research is a Research and Development (R&D) study that produces a product in the form of digital comic media in science learning for Grade III at SD PAB 25 Medan. This study aims to determine the steps in developing digital comic media in science learning at SD PAB 25 Medan, to examine the validity of digital comic media in science learning at SD PAB 25 Medan, and to examine the practicality of digital comic media in science learning at SD PAB 25. This study uses the ADDIE model, namely Analysis, Design, Development, Implementation, Evaluation. The results of the development based on expert assessment show that the material expert validator obtained 90% "very valid", and the media design expert obtained 98% "very valid". The practicality from educators based on teacher responses obtained 90% "very practical". The trial conducted in Grade III at SD PAB 25 Medan with a total of 25 students showed that the overall student response reached 86% in the "very practical" category.

Keywords: Media Development, ADDIE, Digital Comic Media

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1. INTRODUCTION

Education in Indonesia has experienced various developments since independence. Although there has been progress, there are still many challenges that must be faced, such as disparities in the quality of education between rural and urban areas, curriculum changes, uneven teaching quality, and limited access to education. These conditions cause not all Indonesian children to have equal learning opportunities. The education system in Indonesia is officially based on national culture, Pancasila, and the 1945 Constitution as guidelines for the values of national life.

The development of technology provides new opportunities in education. Various tools and programs, such as digital learning platforms, mobile applications, and Augmented Reality (AR)-based games, allow students to access interactive learning resources that can improve understanding and learning motivation. However, low student interest and motivation remain challenges, one of which is related to the use of learning media by teachers. Media that are used effectively can change perspectives and approaches to learning (Pratiwi et al., 2022).

Education is a process of character building and individual potential development. According to Law No. 20 of 2003, education is a conscious and planned effort to create a learning atmosphere that enables students to develop their potential, spiritual strength, personality, intelligence, noble character, and skills that are useful for themselves, society, nation, and state. Several experts emphasize that education is a process of experience and guidance that shapes individual personality and behavior to become independent, critical, and responsible human beings (Permata & Pratiwi, 2024; Rahman et al., 2022; Suparyanto, 2020; Wahidah & Adhar, 2024; Muhammad et al., 2024; Sari et al., 2025).

The goal of national education, in accordance with the vision of the Ministry of Education and Culture, is to create Pancasila students who are critical, creative, independent, faithful, noble, cooperative, and respectful of diversity. Education focuses on the development of cognitive, affective, and psychomotor aspects, as well as character building that is disciplined, responsible, and nationalistic. Quality education also prepares human resources who are competent, skilled, and able to face global challenges (Nietzsche in Barella Yusawinur et al., 2024; Ki Hajar Dewantara in Yulianto, 2024; Mustafa, 2022).

Curriculum is an important component in education. The 2013 Curriculum, which was updated into the Merdeka Curriculum in 2021, emphasizes holistic learning, including the integration of science and social studies into Natural and Social Sciences (IPAS). The role of learning media is very crucial in supporting the curriculum, because media can attract students' attention, facilitate the delivery of material, and make abstract concepts more concrete (Ahmad Rohani in Fadilah et al., 2023).

The transformation of learning media from traditional to digital has a positive impact on the effectiveness of learning. Innovative media, including digital media, can increase students' motivation, curiosity, and understanding through direct interaction with learning materials. Initial observations at SD PAB 25 Medan show that the use of digital media is still limited, so students' interest in learning is not yet optimal.

Based on these conditions, the researcher is interested in developing learning media based on digital comics and games to increase students' interest and understanding in science subjects. This study focuses on the development of digital comic media for science learning in Grade III at SD PAB 25 Medan, with the title: "Development of Comic Media in Science Learning for Grade III at SD PAB 25 Medan".

2. RESEARCH METHOD

The method used in this study is Research and Development (R&D). R&D research is an approach used to produce a particular product and test the effectiveness of that product. This approach allows the development and refinement of existing products based on the analysis of potential and problems found in the field, so that the resulting product can be scientifically accountable.

In this study, the development model used is ADDIE, which stands for Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model emphasizes comprehensive analysis of each component of the product and ensures that interactions between components run in harmony according to the development phases. This model was chosen because its stages are simple, systematic, and suitable for developing interactive learning media based on digital comics.

The stages of research and development using the ADDIE model in this study include: (1) Analysis: identifying students' needs, school conditions, and learning problems that can be addressed with digital comic media, (2) Design: designing digital comic media, including science material content, storyline, visual appearance, and media interactivity, (3) Development: creating a prototype of digital comic media based on the design that has been made, equipped with graphic elements and interactive game features, (4) Implementation: testing the digital comic media in Grade III at SD PAB 25 Medan to assess student responses and learning effectiveness, (5) Evaluation: conducting evaluation through observation, questionnaires, and assessment of students' abilities to determine the effectiveness of the media and necessary improvements.

By using the ADDIE model, this study aims to produce digital comic media that is effective in supporting science learning, increasing students' interest, motivation, and understanding of concepts interactively.

3. RESULTS AND DISCUSSION

This study was conducted in Grade III at SD PAB 25 Medan to develop and test digital comic learning media on the topic of changes in the states of matter. The media was developed using the Canva application and designed to attract students' attention and increase learning enthusiasm. The media product was validated by material experts, media design experts, and language experts before being tested in the field.

Media Validation Results, (1) Material Expert Validation shows that the media is in accordance with lesson plans, basic competencies, core competencies, and the material of changes in the states of matter with a score of 90% (very valid), (2) Media Design Expert Validation shows that the media design is suitable for Grade III students, attractive, easy to use, and integrated with the material, score 98% (very valid), (3) Language Expert Validation shows that the language used in the media is easy to understand, effective, and supports student comprehension, score 90% (very valid), (4) The validation results show that the digital comic media is feasible to be used as science learning media.

Practicality Test Results, (1) Teacher Practicality: the teacher's practicality questionnaire shows a score of 92% (very practical). Teachers stated that the media helps deliver material and increases students' attention and interest in learning, (2) Student Practicality: the student practicality questionnaire (25 students) shows a score of 86% (very practical). Students appear interested, focused, and enthusiastic during learning using digital comic media.

The digital comic media developed is based on the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), which is systematic and suitable for developing interactive learning media. Expert validation shows that this media meets the standards of material, design, and language feasibility. Field trials show that the practicality of the media is well accepted by teachers and students.

This media is able to increase students' motivation, attention, and enthusiasm in science learning, so that learning is no longer monotonous by only reading books or doing exercises. The results of this study are in line with the findings of Kurniawati & Koeswanti (2022) that the development of digital comics can improve student learning achievement, as well as Meidyawati & Ws (2021) and Widyawati & Prodjosantoso (2021) who state that digital comics are feasible to use because they are easy to understand and increase learning motivation.

Thus, digital comic media is feasible to be used as science learning media in Grade III elementary school, effective in increasing learning interest, understanding of material, and student involvement in the learning process.

4. CONCLUSION

Based on the results of the research on the development of digital comic media in science learning in Grade III at SD PAB 25 Medan, it can be concluded that this media is feasible and practical to use. The validation results by material experts, media experts, and language experts show an average score of 90%–98% with the category "very valid", so the media can be used without revision. The practicality test through teacher and student questionnaires obtained averages of 92% and 86%, indicating that the media is very practical in the learning process. The digital comic media was developed using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), starting

from needs analysis and student characteristics, media design using Canva, expert validation, to implementation through practicality testing.

In addition, the development of digital comic media has proven to increase students' interest and enthusiasm in learning science, especially on the topic of changes in the states of matter. This media not only makes it easier for teachers to deliver material but also makes students more focused and active in the learning process. With an attractive visual appearance and an easy-to-understand storyline, digital comic media provides an enjoyable and interactive learning experience, thereby supporting the achievement of educational goals optimally.

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